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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,934	01/08/2007	Mike Tesic	1166/75304-PCT-US	6873
79697	7590	10/01/2008	EXAMINER	
Cooper & Dunham, LLP 1185 Avenue of The Americas New York, NY 10036			KIKNADZE, IRAKLI	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/552,934	Applicant(s) TESIC ET AL.	
	Examiner IRAKLI KIKNADZE	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-75 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-35, 54 and 56-71 is/are allowed.
- 6) ☒ Claim(s) 36-53, 55 and 72-75 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/11/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 36-53 and 55 are rejected under 35 U.S.C. 102(b) as being anticipated by Barnes (US Patent 5,418,832 A).

With respect to claims 36-53 and 55, Barnes teaches an apparatus and method for use in imaging an area of interest of a patient's body, comprising: an imaging source (12) for transmitting an imaging signal relative to the area of interest of the patient's body (16) during an exposure period; a detector (13) for detecting portions of the imaging signal that have interacted with the area of interest of the patient's body and providing a detector output indicative thereof, wherein the detector output includes imaging information for different portions of the area of interest obtained at corresponding different times of the exposure period; a processor (18) for processing the detector output to provide composite imaging information of the area of interest of said patient's body; and a rejection assembly including at least one rejection element extending into a scatter incidence pathway for a detector location of the detector, the scatter incidence pathway being disposed at an angle relative to a primary incidence

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pathway extending linearly between the imaging source and detector location (column 4, lines 4-27 and 29-43; column 4, lines 57-62 and column 5, lines 12-25; Figs. 1-3).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 72-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Siczek et al. (US Patent 5,526,394) in view of Scheid et al. (US Patent 4,998,270).

With respect to claims 72-75, Siczek teaches a method and apparatus for use in imaging a selected tissue region of a patient's body, comprising: source means (28) for transmitting radiation through a selected tissue region of a patient's body; receiving means (30) disposed in opposing relation to said source means such that the selected tissue region of said patient's body is positionable therebetween, the receiving means comprising an array of detector elements for accumulating electrical charge in relation to said radiation; scanning means for scanning the receiving means by moving said array across the selected tissue region of the patient's body as radiation is transmitted through the selected region of the patient's body; and processing means (12) for processing an output signal relating to said electrical charge and for composing a composite image indicative of said selected tissue region of the patient's body

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(column 5, lines 25-42, column 6, line 50 – column 7, line 7). Siczek fails to teach profiling means for providing intensity information regarding radiation transmitted from the source means. Scheid et al. teaches a method and apparatus with collimated controllable x-ray intensity comprising: profiling means for providing intensity information regarding radiation transmitted from an X-ray source (column 2, lines 20-45) providing user with the capabilities to provide proper imaging without overexposing area of the target which have less attenuation than others. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to profile intensity information regarding radiation transmitted from the X-ray source as suggested by Scheid in the method and apparatus of Siczek, since such a modification would provide user with the capabilities to provide proper imaging without overexposing area of the target which have less attenuation than others.

Allowable Subject Matter

5. Claims 1-35, 54 and 56-71 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter:

With respect to claims 1-6, prior art fails to teach or make obvious a method of imaging a selected tissue region of a patient's body, comprising the steps of: transmitting radiation into the selected tissue region of the patient's body during an exposure period; detecting radiation from the selected tissue region of the patient's

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body, wherein detected radiation from the selected tissue region includes a scattered portion corresponding with photonic energy scattered within the selected tissue region, and a non-scattered portion corresponding with photonic energy passing through said selected tissue region substantially free from scattering; estimating first and second parts of said scattered portion, wherein the first part corresponds with photonic energy passing through the selected tissue region with a single scattering occurrence, and wherein the second part corresponds with photonic energy passing through the selected tissue region with multiple scattering occurrences; obtaining radiographic image data in relation to said detected radiation from the selected tissue region; and, utilizing the estimated first and second parts of the scattered portion to adjust the radiographic image data as claimed including all of the limitations of the base claim and any intervening claims.

With respect to claims 7-23, prior art fails to teach or make obvious an apparatus for use in imaging a selected tissue region of a patient's body, comprising: a source for transmitting radiation into said selected region of the patient's body; a detector for detecting radiation from said selected region of the patient's body, wherein detected radiation from the selected tissue region includes a scattered portion corresponding with photonic energy scattered within the selected tissue region, and a non-scattered portion corresponding with photonic energy passing through the selected tissue region substantially free from scattering; and a processor operative for: estimating first and second parts of said scattered portion, wherein said first part corresponds with photonic energy passing through the selected tissue region with a

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single scattering occurrence, and wherein said second part corresponds with photonic energy passing through the selected tissue region with multiple scattering occurrences; obtaining radiographic image data in relation to said detected radiation from the selected tissue region; and, utilizing the estimated first and second parts of the scattered portion to adjust the radiographic image data as claimed including all of the limitations of the base claim and any intervening claims.

With respect to claims 24 and 25, prior art fails to teach or make obvious a method of imaging a selected tissue region of a patient's body, comprising the steps of: transmitting radiation into the selected tissue region of said patient's body during an exposure period; detecting radiation from the selected tissue region of said patient's body, wherein detected radiation from the selected tissue region includes a scattered portion corresponding with photonic energy scattered within the selected tissue region, and a non-scattered portion corresponding with photonic energy passing through the selected tissue region substantially free from scattering; positioning a patient in a desired position for a radiographic procedure; with the patient positioned in the desired position, operating a parameter measurement device to measure a procedure specific value of a scatter related parameter and provide an output indicative thereof; obtaining radiographic image data in relation to said detected radiation from the selected tissue region; and operating a processor to receive the output and use the image-specific value of the scatter related parameter to adjust the radiographic image data as claimed including all of the limitations of the base claim and any intervening claims.

With respect to claims 26-33, prior art fails to teach or make obvious an apparatus for use in imaging a selected tissue region of a patient's body, comprising: a source for transmitting radiation into the selected region of the patient's body; a detector for detecting radiation from the selected region of said patient's body and providing first imaging information based thereon; a patient support for supporting the patient such that the selected region is maintained in a desired imaging position for a radiographic procedure; a sensor for measuring a procedure specific value of a scatter related parameter with the patient positioned in the desired imaging position and providing a sensor output indicative thereof; and a processor for receiving the first imaging information and the sensor output, and providing second imaging information based thereon as claimed including all of the limitations of the base claim and any intervening claims.

With respect to claim 34, prior art fails to teach or make obvious a method for use in imaging a selected tissue region of a patient's body, comprising the steps of: transmitting a photonic energy relative to the area of interest of said patient's body during an exposure period of a radiographic procedure; first operating a detector to detect portions of the photonic energy that have interacted with said area of interest of said patient's body and provide a detector output indicative thereof, wherein the detector output reflects imaging information for different portions of the area of interest obtained at corresponding different times of the exposure period; establishing scatter compensation information for the radiographic procedure; and second operating a processor to process the detector output, using the scatter compensation information to

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provide reduced scatter composite imaging information of the area of interest of the patient's body as claimed.

With respect to claim 35 prior art fails to teach or make obvious an apparatus for use in imaging a selected tissue region of a patient's body, comprising: an imaging source for transmitting photonic energy relative to the area of interest of the patient's body during an exposure period of a radiographic procedure; a detector for detecting portions of the photonic that have interacted with the area of interest of the patient's body and providing a detector output indicative thereof, wherein the detector output includes imaging information for different portions of the area of interest obtained at corresponding different times of the exposure period; and a processor for accessing scatter compensation information for the radiographic procedure and processing the detector output using the scatter compensation information to provide reduced scatter composite imaging information of the area of interest of the patient's body as claimed.

With respect to claims 54, prior art fails to teach or make obvious a method for use in imaging an area of interest within a patient's body, comprising the steps of: establishing a mathematical model for modeling a magnitude of expected scatter detection as a function of a distance between tissue being imaged and a detector surface; and using the mathematical model to set a distance between a tissue support structure and a detector of a medical imaging device as claimed.

With respect to claims 56-64 prior art fails to teach or make obvious a method for use in imaging an area of interest of a patient's body, comprising the steps of: transmitting a photonic imaging signal relative to said area of interest of the patient's

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body during an exposure period of a radiographic procedure; with the patient in an imaging position for the radiographic procedure, measuring at least a first imaging parameter value and a second imaging parameter value; detecting portions of the photonic imaging signal from said area of interest of the patient's body and providing imaging information based thereon; and operating a processor to process the imaging information using the first and second imaging parameter values as claimed including all of the limitations of the base claim and any intervening claims.

With respect to claims 65-71, prior art fails to teach or make obvious an apparatus for use in imaging an area of interest of a patient's body, comprising: a source for transmitting a photonic imaging signal relative to the area of interest of the patient's body during an exposure period of a radiographic procedure; a sensor system for measuring, with the patient in an imaging position for the radiographic procedure, at least a first imaging parameter value and a second imaging parameter value and providing an imaging parameter output indicative thereof; a detector for detecting portions of the photonic imaging signal from the area of interest of the patient's body and providing imaging information based thereon; and a processor for using the imaging parameter output to process the imaging information as claimed including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to IRAKLI KIKNADZE whose telephone number is (571)272-2493. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Irakli Kiknadze
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Primary Examiner, Art Unit 2882
/I. K./ September 23, 2008

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